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THE NORTH DAKOTA FARMER



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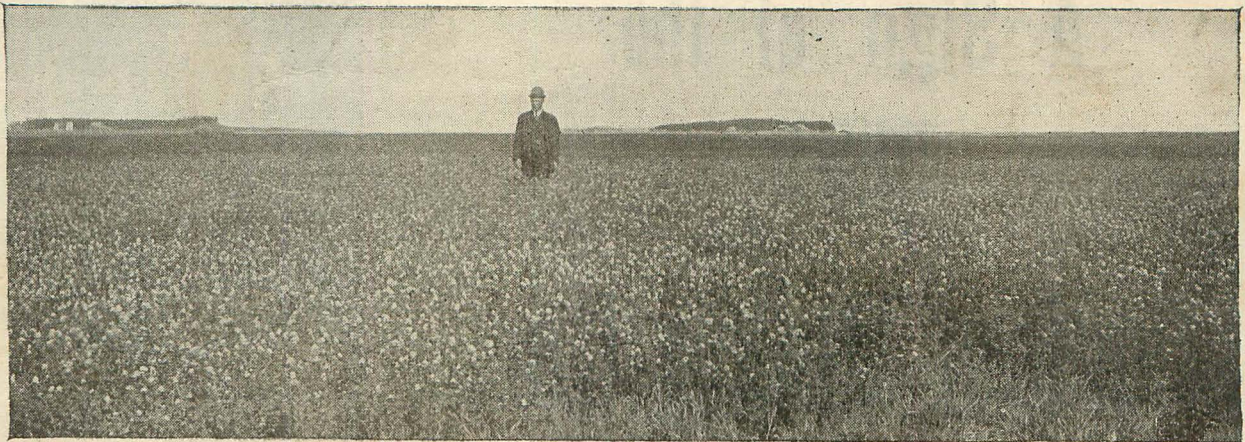
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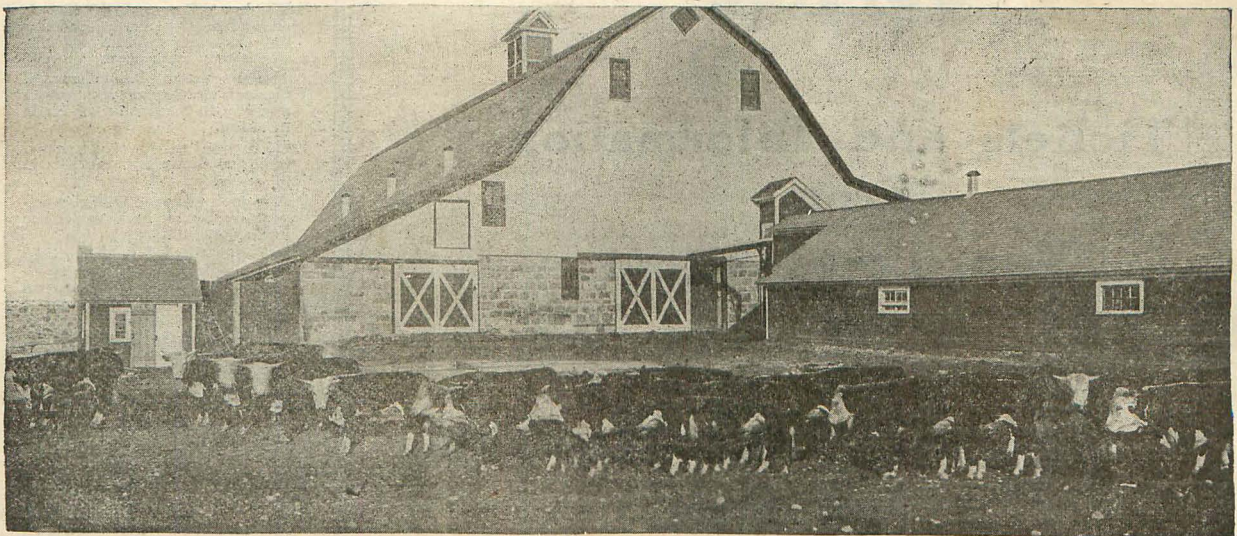
Lisbon, N. D.

November 15, 1916

Vol. 18, No. 5



"Alfalfa is Undoubtedly the Coming Hay Crop for Much of North Dakota"



"The Dairy Cow is Thinly Fleshed and Needs to be Kept in a Good Warm Barn"

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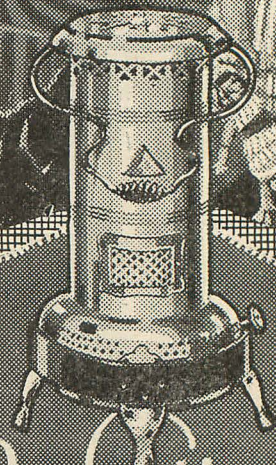
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THE NORTH DAKOTA FARMER

Vol. 18 No. 5

LISBON and FARGO, N. D., NOVEMBER 15, 1916

50 Cents a Year

Let Us Reason Together

WHY THE BANKER AND THE FARMER SHOULD BUILD UP THE HOME TOWN

Paper read by J. R. Moorehead before the Banker-Farmer Conference held in Chicago.

THERE are at least twice as many people living in our smaller cities, towns and villages as live in our fifty great cities. The home market of our farming population living about these smaller cities and towns is just twice as great as the city market. Yet we hear much that would lead one to believe that all of the people in this country to be fed by the producers on the farm are to be found in the great centers where the high cost of living seems now, more than ever, the one great thing talked about and to be considered. Yet, the home market of the farmer is his largest and best market, right at his door where he can bring his produce every working day in the year and sell it to the consumer direct, without the intervention of any middleman whatsoever, and secure therefor every cent without any profit or commission to any middleman whatsoever.

In these nine states, Wisconsin, Missouri, Iowa, Indiana, Michigan, New York, Illinois, Ohio and Pennsylvania, 6,956 towns have lost population, notwithstanding the fact that the population of the whole country increased in the decade covered, 21 per cent. Out of the 777 county seats in these nine states, 217, or nearly 28 per cent of them, have lost population, tho the county seat is in many ways the center of most of the activities of the county unit along the line of politics, courts, collection of taxes and in other directions. And, strange to

say, this tendency of the decline of the towns is greatest in the richest and most thickly settled parts of the states.

What does this mean to you and to me, and to all of the forty million people living in these towns? It means first, a continued loss of business; it means depreciation in property values in these towns; it means a depreciation in farm land value, for the better the town the higher the value there is to the land because of its proximity to the town; it means less deposits in your banks; it means that you will have less money to lend to the farmer and to the business man; it means the boys are not going to stay in the towns; it means that the

downfall of the small business man and the small banker; it means socialism.

What does your home town most need?

First of all, it needs team work, co-operation, first, amongst bankers and business men, and second, by all of these and the farming communities about us. There are too many bankers and business men in these towns who are disloyal to each other—a lack of confidence exists. Competition and business rivalry have tended to make enemies of us, rather than friends and co-workers. The local drygoods man cannot supply the wants of the banker's wife and family because his stock is not fine enough, hence, they trade

by mail or visit the department store. Let me remind such a one that "a town that is good enough to live in is good enough to spend your money in." If you cannot spend your money where you make it you are sucking the life blood out of your town and you ought to move. The lumberman and the hardware merchant and their families are just as often guilty of the same practice, and then they wonder why the town does not improve and their business prosper. What inducement, let me ask, for example, is there for the local drygoods store to carry

in stock goods fine enough for the bankers', the lumbermen's and the hardware merchants' family? None whatever. This, being too often the case, how can the banker expect the merchant, whose note he holds, to meet his obligations if there is taken away from him the only means whereby he may be able to meet them—his profits on goods sold to his neighbors.

The whole question is summed up and stated in the following from one who was at one time the editor of a

MY WORK IS BEST

Let me but do my work from day to day,
In field or forest, at the desk or loom,
In roaring market-place, or tranquil room;
Let me but find it in my heart to say,
When vagrant wishes beckon me astray,
"This is my work; my blessing, not my doom;
Of all who live I am the one by whom
This work can best be done in my own way."
Then shall I see it, not too great nor small
To suit my spirit and arouse my powers;
Then shall I cheerfully greet the laboring hours,
And cheerfully turn, when the long shadows fall
At eventide, to play and love and rest,
Because I know for me my work is best.
—Henry van Dyke.

boy is not going to stay on the farm unless the town affords some attraction; it means economic ruin to many of our best interests; it means less money for schools; it raises the cry of what is to become of the town church, as well as the country church; it means increased problems for the country and states in matters of handling our social and political problems in our great cities; it means concentration of business of every kind in the great centers; it means the

country newspaper in this state, when he said—"If you spend your money where you get it, you will be able to get it where you spend it."

The second great movement that should be inaugurated by the bankers and business men is that of bridging the gulf which exists between the town people and the farmer. It might be to the advantage of perhaps one person in ten thousand in this country to have this gulf made wider, but no more. There are many of our farmers, and some living in towns, who have been educated to believe that the home merchant is a thief and a robber, and that the local banker is no less guilty of sharp practices than the loan shark of our cities. Thousands of them do not even give the home merchants a chance to supply their wants. (No wonder the home merchant does not carry the stock in size and quality to meet the demands of some of our communities. How can he and why should he?)

They send the money away when they have the cash, and the home merchant is only of use and benefit when the crops fail and when the price is so low that they hold for a higher, and in the meantime the merchant becomes the banker, in that he lends his goods, without interest and often borrows the money from you in order to perform this service. Our farmer friends, our neighbors—best friends—have become estranged from us, and the imaginary line between the country and the town is a barrier to the prosperity and the co-operation, and to the good of all. In solving this problem we will not have to work upon all of our farmer friends and our neighbors, most of them are loyal to us and to their town, but it is our duty to co-operate to stifle every movement working to augment this effort to take the trade of the farmer away from his home town. We should enlist every influence to join with us. There is a great quartet of interest in this country, which, if they could be brought together, and in the end they will when conditions become ripe, would work wonders for the good of all. I refer to the bankers and the business men of the towns, the farm press and the country paper.

The movement inaugurated by the bankers, looking to co-operation with other interests in the upbuilding and increasing of efficiency of the farm, is the great movement of the day. It will not succeed at the expense of the millions of people and particularly merchants and bankers located in the towns and smaller cities. They are vitally interested and should become a part and parcel of a great joint

movement that will increase the productive ability of our farmers. You cannot hope to accomplish this increase by in any way crippling that great body of our people who are the nearest to, and the only ones to whom the farmers as a class go to, and depend upon for assistance and co-operation in times of extremity. It is the problem of today, that of feeding this nation, which is already a consuming rather than a producing one. To this cause the merchants and business men of the towns pledge their earnest support. There are more than a million of them. They only ask in return reciprocity on the part of our neighbors and farmers, in order that peace, happiness and prosperity may be the portion of all alike.

Our fourth great aim should be, in order to preserve ourselves, our communities and those about us, to become community builders. Commun-

ity builders to the extent of blotting out the corporate limits, extending the influence of the commercial club and the business organizations to cover the country surrounding. It has been my privilege the most of my life to live in a community which to a large extent has accomplished this thing. We have found out by co-operation on the part of the bankers and the business men that the farming community about us was in hearty sympathy with every effort to meet conditions in and out of the town, where I have lived, and what we as merchants and bankers have done is being repeated throughout the country. Many towns have become awakened to the situation; they are inviting co-operation; they are seeking light; they are spending money; they are doing everything that is possible in their power to promote the feeling of friendship, and cooperation with all classes.

Important New Laws

James E. Boyle of the N. D.
Experiment Station

THE NEW RURAL CREDIT LAW

Outline of Its Main Provisions

1. The farmer turns over his mortgage to his local association. If no association is formed in his community local banks may act as agents.

2. The local association indorses the mortgage and turns it over to the Federal Land Bank in that district.

7. The Federal Land Bank furnishes the farmer the money, thru his local association.

Ten or more persons must incorporate to form a local "National Farm Loan Association." This process is very simple, and is provided for in detail by the Act. Members of the local must take out stock in it at \$5.00 a share of stock for every one hundred dollars of the mortgage they wish to negotiate. This money, however, can be borrowed from the Land Bank. Members of the local do not have unlimited liability. They have, like stockholders in any bank, "double liability," which means they may lose \$10 on every share of stock they buy. The farmer's shares of stock are bought back by the local when his mortgage is paid.

The farmer may be a landowner, or "about to become a landowner." He can borrow up to fifty per cent of the land, or up to twenty per cent of the value of the "permanent, insured improvements." The interest rate will be six per cent or less. The time of the loan will be at least five years, and may be forty years. It must be paid on the amortization plan, that

is, installments must be paid every year large enough to cover the interest and a part of the principal. However, the farmer not wishing to have his place mortgaged for a long period of years, may retire the whole debt at any time after the first five years.

Local banks may be employed, and doubtless will be, to carry out the provisions of this Act. After the Act is tried out for one year, and any community is still without a "National Farm Loan Association" then the government may use the local banks as agents. The local bank will get one-half of one per cent commission for handling the mortgages for the Federal Land Bank.

North Dakota farmers may freely consult the Director of the Experiment Station, Agricultural College, Fargo, for fuller information on this Act. Aid will also be given in making use of the Act.

THE FEDERAL FARM LOAN ACT

I. The "Money Market" and the Farmer

According to a government report, the farmers of the United States have a farm-mortgage debt of \$3,598,985,000. This money is loaned to farmers by banks, by life insurance companies, by mortgage companies, and by private investors. The life insurance companies have loans of five billion dollars only one-seventh of which is loaned to farmers. The estimated

farm-mortgage debt of North Dakota is \$100,364,000. About twenty million dollars of this amount comes from life insurance companies. The agents of these companies charge a commission on the loan, ranging usually from one to two per cent, and averaging 1.8 per cent. The interest rate paid by the farmer averages 8.7 per cent for the whole state. North Dakota banks loan about \$5,000,000 of their funds on North Dakota farm mortgages. These banks handle about \$42,000,000 of outside money, on which they receive a commission. A person borrowing money goes to the money market for the loan, thus there are many money markets. The State of North Dakota has a debt of \$578,700 bearing interest at four per cent. This money was borrowed from state school funds. These funds will eventually amount to about \$50,000,000. Many counties have a bonded debt. One county recently built a new court house, borrowing for that purpose \$200,000 from the State School Fund, at four per cent for twenty years, to be paid back on the installment plan. Most North Dakota cities have a bonded debt, bearing interest at rates ranging from four to six per cent. Hundreds of school districts are likewise borrowers on their bonds, the rate of interest ranging from four to seven per cent. Thus the farmer is seen to pay more than his school, county, municipal or state government, altho they occupy the same territory. The great industries of the country, such as transportation or manufacturing, have access to the central money markets, such as New York, Boston, and Chicago. Thus the railroads have a mortgage debt of ten billion dollars, the interest on which ranges from four to seven per cent. They have two advantages over the farmer: They have direct access to the great money markets of the east, (consisting chiefly of banks, savings banks, trust companies, and insurance companies); They have standardized liquid securities; standardized, in that the railroad bond is well known on the money market, is familiar to all investors thruout the length and breadth of the land, is usually in convenient denominations, such as \$100, \$500, \$1000, etc., and has definite earning power; liquid, in that it can be turned into cash, thru the banks or stock exchanges, any business day of the year, without loss and without delay.

The Farm Loan Act aims to furnish the farmer cheap money. This result will come, it is hoped, thru giving the farmer access to the money markets of the country. The Act provides for a form of security known as Farm

Loan Bonds, issued in denominations of \$25, \$50, \$100, \$500, or \$1000. These bonds will bear a rate of interest not to exceed five per cent. This security will be both standard and liquid. These bonds will be free from all taxes, federal, state, municipal, or local. They will be a lawful investment for all fiduciary or trust funds, and may be accepted as security for all public deposits. In short, they are expected to be equal or superior to the securities used by the great corporations, therefore, it is believed that the money market will absorb quantities of these securities. They can not bear more than five per cent interest, but this is a high rate for an absolutely gilt-edge security. Of course, if they can be sold at four per cent it will mean money at five per cent to the farmer. The amount of the Farm Loan Bonds to be issued is unlimited, depending entirely upon the number of first mortgages for sale by the farmer and the number of Farm Loan Bonds the investors will buy at five per cent or less. It is believed that the present money market will absorb many hundreds of millions of these securities, and also that small investors and money savers all over the country will form a new money market by acquiring the habit of putting their savings in this new form of security. If this proves to be the case, the Act will furnish plenty of cheap money to the farmer with the proper security. It should be added that it is the aim of the Act to furnish the money to farmer at actual cost, which is not to exceed the one per cent margin mentioned above, and may prove to be as low as one half of one per cent. In this case, should the bonds sell at five per cent, the farmer would get his money at five and one-half per cent.

THE GRAIN STANDARDS ACT

This new law was signed by the President as part of the Agricultural Appropriation Bill, August 11, 1916. This is not a law providing for Federal inspection. It is a law providing for (1) Standardization of grades, (2) Federal supervision of inspection, and (3) a Federal Appeal Board.

1. The law provides, in the first place, for the establishment of grain standards by the Federal Department of Agriculture. This Department has for some time had an office of Grain Standardization. This new law gives the Department of Agriculture the authority to fix standards of equality and condition for wheat, corn, rye, oats, barley, flax and other grains, and these standards are to be known as the official grain standards of the

United States. When these new standards shall have been fixed, no person will be permitted to ship in interstate or foreign commerce any grain sold or offered for sale by grade, unless the grains have one of the grades fixed in the official grain standards of the Federal government. However, grain may be sold by sample without any designation of its grade. And it is also provided that in certain cases when shipments are made to and from points where there is no inspector, the grain may be shipped without inspection, in which event either party to the transaction may refer any dispute as to the grade to the Secretary of Agriculture.

2. The Federal government will appoint one or more expert grain "supervisors" for each terminal market, who shall have authority to supervise the inspection of grain, "to secure just and fair inspection and grading and to see that the grading is made to conform to the standards fixed and established by the Secretary of Agriculture." In case the state has no grain inspection department, the federal government will employ persons for carrying out the provisions of this law. But in states, which have or may hereafter have, grain inspection departments, the Secretary of Agriculture is required to issue licenses to grain inspectors employed under the laws of such states. These licensed inspectors will then carry out the provisions of this act.

3. Appeals, in cases of dispute, may be taken to the Federal Department of Agriculture.

WHEN TO CUT ALFALFA

Alfalfa plants are weakened when cut too early. At the Kansas Experiment Station a two-year's trial brought out the fact that alfalfa cut when one-tenth in bloom and when in full bloom gave the most hay. Less hay was secured when the alfalfa was cut in the bud stage and the alfalfa was weakened so that weeds secured a good hold. A few weeds appeared in the alfalfa cut when one-tenth in bloom, but no weeds appeared in the alfalfa cut in full bloom and when ripe. From the standpoint of hay yield and the keeping up of the alfalfa the time to cut alfalfa is when between one-tenth in bloom and full bloom.

Other things being equal early maturing animals subject the owner to less risk of loss by disease.

Christmas Magazine Offer

Don't miss offer on page twelve.

The Legume Alfalfa

ALFALFA AS A PASTURE FOR HOGS

The value of alfalfa as a hog pasture has become quite generally known thruout those parts of the United States where it is extensively grown. In the western and Pacific coast states where alfalfa is extensively produced under irrigation it is used as the principle feed in growing hogs. By keeping hogs on a good alfalfa pasture thru the summer they are successfully grown by feeding a two and one-half or three per cent grain ration, that is,



The Alfalfa Plant

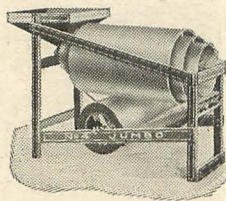
feeding two and one-half or three per cent grain ration, that is, feeding two and one-half to three pounds of grain per day per each one hundred pounds live weight of pigs in addition to the feed the pigs receive from the alfalfa. Where pigs are grown without the use of pasture from four to five pounds of grain per day for each one hundred pounds live weight is required. Thus it is seen that for growing pigs alfalfa pasture is even more efficient than is the hay for wintering brood sows.

On most North Dakota farms upon which alfalfa has been grown for several years it is now being used for

hog pasture. Its use for that purpose should become general in a very short time for it has been clearly demonstrated that as a hog pasture alfalfa is one of the most suitable crops and produces a large amount of feed per acre. This, together with its permanency and the fact that it comes on early in the spring and produces tender green growth thruout the growing season are the characteristics that make it so desirable as a hog pasture.

Small fields of alfalfa have been used as trial pastures at the North Dakota Experiment Station for five years. When pastured heavily enough to keep the alfalfa down it will support from 1600 to 2000 pounds of hogs per acre thru the season provided they are fed about a three per cent grain ration in addition.

Where a permanent alfalfa pasture is used as a hog pasture it is not possible to pasture it evenly thruout the season because in the early spring when the alfalfa makes its most rapid growth the pigs are small and do not require so much green feed as they do later on when they get larger. This, however, need not occasion any loss because the first growth can be cut and made into hay and then if the pasture is the right size for the number of pigs they will just keep it down nicely for the remainder of the season. Large pigs pasturing on alfalfa should be "wring" or have rings put in their noses so as to prevent their rooting out the alfalfa plants. If the pasture gets a little short during dry weather the pigs will start digging out the roots and eating them. Inasmuch as the crop is so valuable it pays to exercise care in pasturing it and to keep a watchful eye on the hogs to see that they do not get a chance to eat it down too close or dig out the roots.



NEW IMPROVED JUMBO—The best grader for all kinds of grain, separates Oats from Wheat and Barley, and Mustard from Flax; cleans all kinds of Grass Seed. The sieves are large and well made. Has a larger capacity than any other mill of its size or price. Our new Wild Oat Drum for taking Wild Oats out of tame Oats fits in any Jumbo—something every Farmer should have, clean seed Oats.

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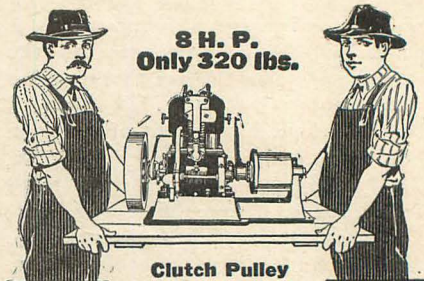
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Cushman Light Weight Engines

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The 4 H. P. weighs only 190 lbs. Mounted on iron truck, as shown below, it may be pulled around anywhere. Besides doing all other work, it may be attached to moving machines in the field, such as grain and corn binders, potato diggers, etc., driving the operating part and leaving the horses nothing to do but pull the machine out of gear. 8 H. P. 2-cyl. weighs only 320 pounds.

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SAVE THE ALFALFA LEAVES

Two-thirds of the feeding value of the alfalfa plant is in the leaves. If the leaves are lost in curing only one-third of the feeding value remains. This makes it important that alfalfa hay be cured so as to save the leaves. This means that the alfalfa must be raked into windrows before the leaves dry or they will fall off. The alfalfa should be raked into windrows an hour or two after being cut. This not only saves the leaves but also keeps it green and more of the flavor is retained.

MACHINES FOR CUTTING ALFALFA SEED

There are various methods of cutting alfalfa preparatory to threshing. Some farmers have cut their alfalfa seed with a binder. Occasionally it is sufficiently tall and upright to be cut and bound in the same manner as wheat or oats. When this can be done it simplifies the problem a good deal as it is much easier handled and less liable to shatter after being cut. In certain cases the crop has been cut successfully with the binder but not bound, being deposited in gavels to be handled later with a wide fork. In either case, if cut with a binder, it is well to make the cutting when the alfalfa is damp so that the work of the packers of the binder upon the pods will thresh out the minimum amount of seed.

In other states a header has been used to cut seed alfalfa but this method has probably not been used in North Dakota. The common reaper is an excellent machine for cutting alfalfa for seed. Generally speaking, this will secure more or less prostrate alfalfa stems, if there are any, almost as well as a mowing machine. In the western part of North Dakota, at any rate, there are a good many of old-fashioned reapers which have been used for securing crops of flax. The alfalfa can be left in gavels as deposited by the reaper or it may be well to pile them into small cocks.

Probably most of the alfalfa seed crop in North Dakota is cut by the mowing machine. If the mowing machine is equipped with windrowing or buncher attachment there is not much danger of losing seed. If the mower has the buncher attachment it will be almost necessary for a man to follow with a fork setting over the bunches so that the horses upon their next round will not tread upon them. With a windrowing attachment the alfalfa can be deposited behind the mower and this trouble obviated.

REDUCING ACCIDENTS AT GRADE CROSSINGS

That grade crossing accidents, caused by automobilists crossing ahead of passenger trains, may be reduced to a minimum the Northern Pacific railway has started a campaign in states thru which it operates. Under the caption, "a word of caution to motorists," printed circulars embodying ways and means for the avoidance of such collisions have been sent to all secretaries of state in the Northwest with the request that these be distributed when new license plates are sent out.

"With the number of automobiles

coming into use rapidly increasing it cannot be too strongly emphasized that caution should be observed by drivers when approaching grade crossings" says the circular. "Daily reports show accidents that could have been averted had the driver of the motor car stopped, looked and listened before attempting to cross ahead of an

IF YOU WANT A GOOD HOME


Try a Central Missouri Farm. Two good lines of Railroad. Good schools; Railroad division; best of water. Write R. F. White, Elden, Mo.

Thousands of Blood Thirsty WORMS are Robbing You

If you could see, with your own eyes, the thousands of blood-sucking parasites at work right now in the stomachs and intestines of your farm animals, you would be astonished and horrified at their ghastly work of destruction. You would see these filthy leeches gorging themselves with your costly feed and with the very life blood of your animals. You would see them stealing your profits. If you knew what disease and losses they will cause you, you would not rest until you had freed your stock from these hungry hordes, and saved your animals from the slow, living death that is caused by these blood-draining, life-sapping, profit-stealing pests.

DESTROY THEM WITH

THE GREAT WORM DESTROYER



THE GREAT LIVE STOCK CONDITIONER

SAL-VET is the most widely used and most effective live stock remedy. It not only destroys worms, but also aids digestion, so your stock make better gains, look better, grow into profit faster, without consuming more feed. Thousands of farmers whose herds I have freed from worms, write like this:

"Your 'Sal-Vet' saved my hogs. They were dying, but after I commenced feeding 'Sal-Vet,' I did not lose another one."—Arthur Stutler, Jessup, Ind.

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and give you the name of my nearby dealer, from whom you can get enough SAL-VET to last all of your stock 60 days. He will refund your money if SAL-VET fails to rid them of stomach and free intestinal worms, and put animals in good condition.

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approaching train.

"Government statistics show the number of persons killed and injured in the United States at grade crossings to be as follows: During 1914, 1147 persons killed, 2935 injured; during 1915, 997 persons killed, 2898 in-

jured. The reduction in casualties during 1915 as compared with the previous year are due to warning notices posted by railway companies and automobile clubs who are endeavoring to provide effective means for eliminating the hazard as much as possible.

"But the real measures of avoiding such accidents are to be found in the care observed by individual drivers themselves! Let your slogan be—Stop, Look, Listen!

"Drivers owe this to themselves and to the passengers riding in their automobiles. They hold as great a responsibility toward their families and friends as do the engineers of rapidly moving passenger trains to the patrons whose destinies they are charged with. All the signs, notices, bells, whistles, gates and flagmen hired to protect the public are of no avail unless they can have the cooperation of the motorists.

"Observations have been made to record the care shown by automobile drivers and in 35,000 instances the following results were noted: 53 per cent looked neither way before passing over a grade crossing; 8 per cent looked one way only; and 174 motor

car drivers, "about half of one percent) actually stopped their machines before proceeding to pass over the crossing. These figures show that few men of undoubted intelligence display the necessary caution that may save their lives, limbs and property, by simply waiting a moment or two to allow the train to pass.

"Trains have no choice of routes; they must run on the rails and their patrons require that they be on time, if possible. On the contrary, motor car drivers can choose their own routes and the occupants of such machines usually are not pressed for time.

"If automobile drivers would make it a habit to associate the sight of a grade crossing and its advance notices with the sight of a traffic policeman, and control their machines accordingly, grade crossing accidents would cease. No man is immune to the accidents at grade crossings which are so frequent with the constantly growing use of the automobile.

"Trains moving at speeds from 25 to 40 miles an hour can, under ordinary conditions, stop in about 1,200 feet. Motor cars running at the same speed can be stopped in about 30 feet. The train often weighs as much as 3,000 tons while the automobile's weight rarely exceeds two tons. It can be readily seen, therefore, that the greater weight, once under way, is much harder to stop. Every motorist should himself adopt a policy of carefulness that will render him immune from such collisions."

GOVERNMENT CROP REPORT

Washington, D. C., Nov. 8, 1916.
A summary of preliminary estimates of crop production for the State of North Dakota and for the United States, as compiled by the Bureau of Crop Estimates (and transmitted thru the Weather Bureau), U. S. Department of Agriculture, is as follows:

Corn

State: Estimate this year, 13,540,000 bushels; production last year (final estimate), 9,800,000 bushels.

United States: Estimate this year, 2,640,000,000 bushels; production last year (final estimate), 3,054,535,000 bushels.

Wheat

State: October estimate, 39,039,000 bushels; production last year (final estimate), 151,970,000 bushels.

United States: October estimate, 607,557,000 bushels; production last year (final estimate), 1,011,505,000 bushels.

Oats

State: October estimate, 54,266,000 bushels; production last year (final estimate), 98,000,000 bushels.

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Remember, for Quickest Work and Best Workmanship, send us your Tanning. We pay Highest Prices for HIDES and FURS. Honest Grading and Quickest Returns. References:—Any Bank in Watertown, S. D., also the Dun & Bradstreet Agencies. Let us hear from you



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United States: October estimate, 1,229,182,000 bushels; production last year (final estimate), 1,540,362,000 bushels.

Barley

State: October estimate, 26,040,000 bushels; production last year (final estimate), 44,800,000 bushels.

United States: October estimate, 183,536,000 bushels; production last year (final estimate), 237,009,000 bushels.

Flaxseed

State: Estimate this year, 8,500,000 bushels; production last year (final estimate), 6,534,000 bushels.

United States: Estimate this year, 15,300,000 bushels; production last year (final estimate), 13,845,000 bushels.

Potatoes

State: Estimate this year, 7,630,000 bushels; production last year (final estimate), 7,200,000 bushels.

United States: Estimate this year 289,000,000 bushels; production last year (final estimate), 359,103,000 bushels.

Hay

State: September estimate, 801,000 tons; production last year (final estimate), 660,000 tons.

United States: September estimate, 86,155,000 tons; production last year (final estimate), 85,225,000 tons.

Prices

The first price given below is the average November 1 this year, and the second the average on November 1 last year.

State: Wheat, 155 and 83 cents per bushel. Corn, 86 and 59. Oats, 41 and 26. Potatoes, 102 and 37. Hay, \$5.80 and \$5.40 per ton. Eggs, 28 and 24 cents per dozen.

United States: Wheat, 158 and 93.1 cents per bushel. Corn, 85 and 61.9 cents. Oats, 49 and 34.9 cents. Potatoes, 136 and 60.8 cents. Hay, \$10.68 and \$10.83 per ton. Cotton, 18 and 11.6 cents per pound. Eggs, 32 and 26.3 cents per dozen.

CORN AN AMERICAN CROP

Corn the king of crops is a native of America and it is in America that it has reached its greatest importance. Most of the meat and pork that we eat is from corn fed cattle and hogs. Most of the milk, butter and cheese that comes to our tables is from cows fed corn. Most of the horses and mules are fed corn. The starch that stiffens our shirt bosoms and that is used in cookery is made from corn. Much of the syrup that goes on our morning pancakes is made from corn and much of the foundation material for candy is made from corn. Paper can be made from corn stalks. From

the pith gun cotton and other high explosives are made. The pith is also used to protect our battle ships. A layer of pith is placed under the armor plate. If the side should be pierced the pith swells up and closes the hole. Alcohol is also made from corn. It has been largely unused but when the oil wells go dry and the coal mines cease to yield their product, the alcohol from corn may speed our automobiles, turn the wheels in the factories and furnish light. An oil is extracted from the corn which is edible. It is also used in soap-making. It can also be made into rubber. The husks of the corn are used in mattresses. Corn is used quite extensively as a human food. Corn meal, hominy

and grits and then there is the sweet corn that comes onto most tables the year round, and popcorn to fill in between meal times.



You can be sure of the highest possible price for
Hides, Furs, Pelts, Etc.
if you ship to the old reliable
Northwestern Hide and Fur Co.
Est. 1890
Minneapolis, Minnesota
Send for quotation price list and catalog of Trappers Supplies. We give a good luck watch fob free for every shipment or purchase of \$5.00 or over. Reference: Any bank in Minneapolis

**160 ACRE
FARMS IN
WESTERN
CANADA
FREE**



Canadian Farmers Profit From Wheat

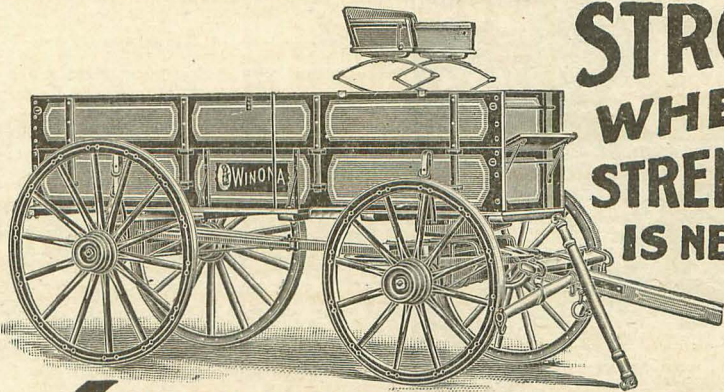
The war's devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and wheat near \$2 a bushel offers great profits to the farmer. Canada's invitation is therefore especially attractive. She wants settlers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops.

You can get a Homestead of 160 acres FREE and other lands at remarkably low prices. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to acre. Wonderful crops also of **Oats, Barley and Flax.**

Mixed farming as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent.

Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war. The Government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

W. E. BLACK, Clifford Block, Grand Forks, N. D.
Canadian Gov't Agt.



**STRONG
WHERE
STRENGTH
IS NEEDED**

WINONA Wagons have extra protection at points of greatest strain. Outer bearing axles bring load up against wheels, preventing break-down and insuring light draft. Clipped gears. Bent and double riveted Felloes. Strongest Skeins and Poles. Re-inforced Hounds—Built-to-last Boxes. Iron Clad Hubs when ordered.

WINONA FARM WAGONS

STRONGEST and lightest running. "Good timber and bone dry" with highest grade ironing and quality painting. The wagons you can depend on to carry your heaviest loads without the annoyance and expense of frequent breakdowns.

Write for Catalogue F
it tells why Winona wagons lead them all.

Winona Wagon Company, Winona, Minn.

But this is not all that corn is doing. It is the great cleaning crop. When wheat has been grown till the soil is exhausted and weedy corn has come in and cleaned it up so that wheat could be grown at a profit again and so that clover, timothy and alfalfa could make a start. This it has done from Maine to North Dakota and is now doing in North Dakota as fast as it is given a chance. Corn itself not only furnishes so much but it extends a helping hand to grain growing, to grass growing and to clover and alfalfa growing.

FREE!

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GALLOWAY GASOLINE ENGINES

This book will tell you why you should insist on a **HEAVY WEIGHT, LARGE BORE, LONG STROKE and LOW SPEED** engine instead of the short stroke, small bore, high speed, light weight engines made, built and sold at lower prices. Galloway engines are built to stand up under the hardest test—to give a **LIFETIME OF SERVICE** at hard, tough jobs—year in and year out satisfaction at **HEAVY WORK**. Describes and illustrates every style and size for farm and shop; tells how to line up a power house, filled from cover to cover with interesting instructive engine facts.

SANITARY CREAM SEPARATORS

This book is chock full of cream separator facts. It tells you why I can sell you the best separator ever built for less money than any other cream separator manufacturer or distributor. It tells you how we build quality into our separator, out of which you get the service. It tells all about our five selling plans and our 90-day trial on your farm. Every sale backed by \$25,000 guarantee bond, in addition to the reputation of the Galloway institution. You can't afford to buy a separator of any make before getting this book.

Wm. Galloway, Pres., Wm. Galloway Co., Galloway Sta., Waterloo, Iowa

14 3/4% ECONOMY.

Before you buy any more fence, write for facts about our **26-inch ECONOMY HOG FENCE** at 14 3/4% per rod. Many other styles and prices.

Keystone Steel & Wire Co., 5893 Industrial St., PEORIA, ILL.

POTATO DEPARTMENT

H. O. Werner, Secy. N. D. Potato Assn.

LEGUMES AND POTATOES IN THE CROP ROTATION

The importance of crop rotation with all crops is now generally recognized. This is very important with the potato crop. One of the most serious consequences from failure to rotate the potato crop is the heavy loss from disease. Potatoes should never follow potatoes on the same land more than two years and most advisably not that much. There should be at least three or four years between the crops of potatoes on the same land.

In isolated cases, it may have been possible to raise potatoes on the same land year after year. However, this is not a safe practice and it is only a matter of time until the soil will become disease infested. Crop rotation is a good method for avoiding trouble from potato diseases.

The system of farming will chiefly determine the character of the rotation. Besides that, several things to bear in mind are,—the amount of soil fertility the various crops in the rotation remove from or return to the soil; the amount of soil moisture required by the various crops; the effect the various crops have on the condition of the soil and on the prevalence of weeds.

A good rotation under North Dakota conditions with special reference to improving the potato crop is the following:

First year: wheat and oats.

Second year: clover or alfalfa.

Third year: corn and potatoes.

To develop into the best crop, potatoes require an abundance of soil moisture. For this reason it is not advisable to have them follow either wheat or oats in a rotation, since these crops consume much soil moisture, especially oats. The rotation can be extended to four or five years by extending the period in which grass occupies the field. It is probably advisable to have alfalfa about three years if it is used in the rotation. If left to get too old, it is difficult to put an alfalfa field into good shape for potatoes.

In experiments carried on by a number of the experiment stations, the yield of potatoes was always increased by crop rotation, whereas by continual cropping to potatoes the yield decreased steadily. Of the various kinds of crops that were used in these experimental rotations, those having one of the various legumes showed the best results.

Legume crops,—such as the clovers and alfalfa especially,—are valuable in the potato rotation chiefly for the following reasons:

1. They add fertility to the soil, especially nitrogen.
2. They add organic matter to the soil, thus putting it into better condition. The large amount of green manure tends to add some acidity to the soil, a little of which is desirable to help in controlling scab.
3. By means of their long deep going roots (especially alfalfa) they put

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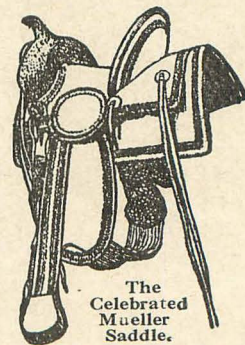
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160 acres good clay loam land 3 miles from Leonard, Beltrami County, Minnesota. On state road, 1 mile to school and church. 40 acres under cultivation, balance fenced for pasture. House, barn, granary and other buildings in good condition. Scandinavian settlement. A bargain at \$30 per acre on easy terms. Write for particulars to

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THE FRED MUELLER

Saddle & Harness Co., Dept. R. 1413-15-17-19 Larimer St. Denver, Colo. Send in your name for our catalogue now ready.

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There must be a reason why there is such a demand for Justin's Boots. If you are going to wear boots, why not wear the best? Yours for the Best Cowboy Boots Made. Send us your address on a postal card and we will send you our catalogue, and self-measuring system.

GIVE US A TRIAL

H. J. JUSTIN & SONS

Mfgs. of Justin's Celebrated Cowboy Boots. NOCONA, TEXAS

the soil into better physical conditions.

A two-ton crop of clover hay will remove about 80 pounds of nitrogen, 10 pounds of phosphorus and 60 pounds of potassium. A two-ton crop of alfalfa will remove about 50, 18 and 91 pounds respectively, of the same elements. Comparing with this a 150-bushel crop of potatoes which consumes about 32 pounds of nitrogen, 6.5 pounds of phosphorus and 45 pounds of potassium, we see that the two legume crops remove more plant food than potatoes. However, if it is the desire to produce a good potato crop,—the last crop of clover or alfalfa may be plowed under instead of being hauled off the field. In this way, by plowing under the equivalent of only a ton or two of either alfalfa or clover hay,—as green manure in the fall, there will be returned to the soil enough plant food to produce a good crop of potatoes. An average ton of red clover is equivalent in fertilizer value to about four tons of barnyard manure. The value of alfalfa is a little higher. Then, too, a crop of green clover plowed under is more desirable for potatoes than an application of manure.

Red clover has about one-third of the total nitrogen content of the plant in the roots. It also takes about one-third of the total nitrogen from the soil. The other two-thirds is taken from the atmosphere and "fixed" by the small tubercles on the roots. (The tendency is for this function to be much more active on poor than on rich soils). Thus, if a crop of clover is removed there is no loss or gain of nitrogen to the soil, but if the crop is plowed under all the nitrogen in the tops, is sure gain to the soil.

At the same time the plant food is added to the soil, much organic matter is also added. This helps to aerate the soil and to hold the soil moisture.

The deep roots, especially of alfalfa, loosen the soil for a considerable depth. Anything like this facilitates the easy growth of roots for the following crop will make it possible for a better crop of smooth potatoes to be produced on that land.

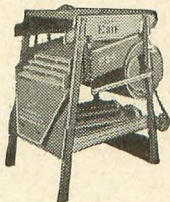
In the rotation it is always best to have potatoes follow the clover. It is better practice than following corn. If manure is applied in the rotation it can be applied to the small grain or clover, but never to the potatoes.

The clover or alfalfa should be fall plowed so that the soil can be put into better physical condition and also to avoid the loss of soil moisture in the spring,—as clover or alfalfa by their early spring growth will dispose of considerable soil moisture which should be reserved for the potatoes.

The crop rotation does not only help the potato crop, but it helps the other crops in the rotation. The clean cultivation given potatoes keeps down the weeds. The deep plowing and then the stirring of the soil by the digger and the general good cul-

ture, all tend to put the soil in the very best physical condition for the grain or other crops in the rotation.

Anyone wishing to procure maximum returns from potatoes will do wisely to rotate the crops and include some legume grass in the rotation.



Improved Erie Cleaner and Grader. In our Erie you will find a new fanning mill to separate Oats from Wheat and Barley and grades it better than any mill made. This we do on our new roll system in place of a flat screen as all others have. This also takes cockle out, that others cannot do. This is the only way to grade by rolls; cleans all grain perfectly, also Grass Seed and Flax. We guarantee a perfect grader in our ERIE mill. Wild Oats separator every Farmer needs, to get clean Seed Oats. We have also a perfect Smut machine. Every machine guaranteed. Buy no other until you have written us for full particulars. Write at once for Catalog "B".
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For what purposes the school house may be used?
Who may vote on school matters and what are the voters' qualifications?
How schools may be consolidated?
What recourse one has if he is not satisfied with the ratings of the examining board?
Whether free text-books may be adopted without a vote?
What to do when a pupil or parent disturbs the school?
What provision is now made for transportation of pupils?
How pupils may be compelled to attend school?
Whether children may be employed in stores and factories?
How a certificate may be revoked?
What the law is regarding drinking cups, fire escapes, hitching posts, school libraries, pension fund, accredited diplomas, etc.?

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Lisbon, North Dakota

North Dakota Farmer

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MANAGING EDITOR : W. G. CROCKER
ASSOCIATE EDITORS:
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Vol. 18 NOVEMBER, 1916 No 5

Di-ver-si-fy! **You** know why.

Have you joined the North Dakota
Potato Association? Better do so.

Bacteria are the farmers' best
friends and most bitter foes. Cold
makes them dormant, high temper-
ature kills them.

The reputation built up by a com-
munity that cooperates in the produc-
tion of live stock corn, butter or pota-
toes is a valuable asset, which yields
cash with every load of the commod-
ity sold.

Never before in this country was
there such an example of co-operation
in politics as was exhibited at the
primary and fall election in North
Dakota. Now let the farmers co-
operate as loyally in all activities of
the farm, home, school and church.

The Department of Agriculture is in-
vestigating the frauds practiced by
some shippers of baled hay, who
vencer bales of inferior hay with a
higher grade. Live stock as well as
human beings have cause for com-
plaint against adulteration.

We are very glad to learn that
Frank Sanford is reappointed Super-
intendent of institutes. Mr. Sanford
has been giving excellent satisfaction,
for the farmers take stock in the man
of such long, practical xperience. If
you have not planned for a Farmers'
Institute, do so at once.

One reason, and perhaps the main
reason, why North Dakota Schools
are among the foremost in the country
is because North Dakota spends \$9.62
per capita for the support of common
schools, whereas Georgia spends but
\$1.98. People who want good schools
and are willing to pay the price get
what they pay for.

The farmer who has a well-planned
farmstead is a public benefactor.
Judging by the appearance of some
farm homes, one is reminded of the
poor fellow who was chided for being
drunk in the gutter. His reply was,
"Looks is nothing; behavior's all."
One cannot help judging interior ar-
rangements by exterior appearances.

From 402 answers to inquiries sent
out by the Department of Agriculture
it has been estimated that the State
of North Dakota lost the past season
13.1 bushels per acre or 92,984,000
bushels of wheat on account of black
rust. Isn't this a convincing argu-
ment in favor of diversified farming?

All interested in live stock would do
well to send to the First National
Bank of St. Paul for two booklets, by
Prof. H. R. Smith, on "Profitable
Stock Feeding," and "Cattle for The
Northwest." These are being distrib-
uted complimentary to farmers. They
are gems of the printer's art and are
as valuable as they are artistic.

Go carefully over all farm imple-
ments and tag those in need of repair,
then later see that the repairs are
made. With the amount lost annual-
ly by the farmers each year thru
neglect of farm machinery, a Normal
School might be built, and maintained
many years. Not only is the mach-
inery preserved, but valuable time
is saved at the busy season by having
all machinery in proper shape.

One town in North Dakota stands
out pre-eminent as an example of suc-
cessful cooperation. That town is
New Salem. For 20 years the cream-
ery at New Salem has not missed a
single day. There is scarcely a State
Butter Exhibit that does not award to
New Salem the first prize. What
New Salem has done in butter making
your community can do in that or
other enterprises.

Several years ago the North Dakota
Farmer was criticized because it did
not advocate cornering the wheat mar-
ket for dollar wheat. The market
price of wheat today is nearer two dol-
lars than it was then near one dollar.
North Dakota cannot dictate as to the
market price of wheat, but she can
dictate as to the honest handling of
the wheat by terminal elevators, or
she will know the reason why.

The "National Conference on Mar-
keting and Farm Credits" will hold
its annual session at the Hotel Sher-
man, Chicago, December 4-9, and on
December 8-9 the National Council of

Farmers' Cooperative Association, rep-
resenting 300,000 organized grain farm-
ers, will meet in the same city. At
these meetings over 2,000,000 Ameri-
can Farmers will be represented. Two
trainloads of Northwestern grain farm-
ers will be headed by Governor-elect
Lynn J. Frazier.

The next legislature will be in con-
trol of the farmers, the first time in
the history of the state. It now re-
mains to be seen whether they will act
independently for their own best in-
terests or will be hoodwinked by
scheming politicians who pretend loy-
alty to the farmers' cause. We strongly
advise the legislature to pass the few
vital measures for which they have
long been battling, leave strictly
alone existing laws that have not had
a fair trial, and then adjourn.

According to a Bulletin on 1916
Wheats a car load of Feed D wheat
when milled retailed at over \$2100,
but brought the farmers only \$653.
It is evident that the profits were re-
turned to others rather than to the
farmers. No. 1 Northern increased in
value 60% from the farmer to the re-
tail buyer, whereas Feed D increased
250%. If the profits came to the
farmers one might infer that the low-
est grade would be far more profitable
than No. 1 Hard or Northern. Send
for Bulletin No. 119. Dr. Ladd has
furnished some interesting reading.

MERRY XMAS OFFERS

Take your choice of the following
Holiday Offers of well-known standard
magazines:

1. **Today's**, North Dakota Farmer,
Home Life and **Woman's World**, \$.80.

2. **Reliable Poultry Journal**,
North Dakota Farmer, **Housewife**,
and **Woman's World**, \$.95.

3. **McCall's**, **Woman's World**,
North Dakota Farmer and **Boys'**
Magazine, \$1.20.

4. **Ladies' World**, **Today's**, North
Dakota Farmer, **Woman's World**, \$1.20

5. **Modern Priscilla**, North Dako-
ta Farmer, **Woman's World**, **Today's**,
\$1.20.

6. **Woman's World**, **Metropolitan**
North Dakota Farmer, **People's Home**
Journal, \$1.45.

Order by number.

A pattern with **Today's** or **McCall's**.

You may add The Rotary to any
of the above clubs for only 30 cents,
if you order before Xmas.

Address, North Dakota Farmer,
Lisbon, N. D.

Livestock Department

FARM AND STOCK NOTES N. J. Shepherd

An overfed hog is rarely a profitable parent.

Milk the cows clean if you would have them milk long.

A scrub may yield a profit, but if so a good animal will give a greater profit.

Fully ripen the cream but do not allow the ripening process to go too far.

The sow that raises a large litter of pigs cuts down the cost of production.

You cannot push pigs too fast provided you use the right kind of feed.

As a rule full matured sows produce large litters and are more quiet at farrowing time.

Larger crops and increased prosperity are always the result of the introduction of better teams in any locality.

In nearly all cases the young sow proves her future ability by the way she handles her first litter.

The uniform excellence of a bunch of feeders from a good sire adds much to the profit of raising and feeding hogs.

The real test of value in a horse is strength, lively action, and endurance, all combined in the lightest weight possible.

The horses that are best able to stand hard strain are those which work steadily every day in the week.

After the pigs are weaned the sows should be well fed so as to be gaining when they are bred again.

The man with thin or worn lands to enrich can use sheep to a better advantage than he can any other animal.

A well fed pig is usually a contented one and will take only such exercise as is required for health; thrift not hunger should prompt to exercise.

By a rotation of crops a supply of humus is maintained, nitrogen is restored. Alternate crops having different root systems and habits of growth can be grown.

The farmer who is far from market is the man who should always aim to market his grain and hay in the most compact form possible.

Any more horses than are actually required to do the work on a farm should be considered as luxuries unless some profit may be derived by keeping them.

The profits of pork will be largely increased and the risk of loss decreased by pushing the pigs from the start and marketing them at from seven to ten months old.

The more nearly finished a horse is in the way of being well broken and conditioned in every way, the more in demand he will be and the better price he will bring.

The first year the colt will make a pound of growth with less feed than at any other time and we not only get cheap growth by early development but in the end get larger and better horses and early maturity.

A heavy well-proportioned draft horse, with plenty of spirit in him and style enough about him to show off well, presents a more attractive appearance than any light or small horse could. Every thing else being equal the showy horse will find ten admirers to where the slouchy, sleepy horse will find one.

The food of support is more than the food of gain under the most favorable circumstances. For the production of energy in the form of muscle or bodily heat the animal must use so much food. If it is given only this amount of food it cannot gain and there is nothing whatever to show for the food it consumes. If it is given more food it can gain; and the gain is very nearly in proportion to this increase in food.

BALANCING THE RATION FOR THE DAIRY HERD

**Economy Demands That Ration
be made up of Home-Grown
Feed as much as possible**

Economy in feeding usually demands that as much of the ration as possible be made up of home-grown feed stuffs, especially with regard to the roughage.

First, provide for all the good, clean farm-grown roughage that the cow will eat up clean, as the nutrients in roughages are generally much cheaper than in concentrated feeds.

Now consider whether the grain on hand is such as to make a balanced ration with the roughage used. Concentrates must be used because cows cannot consume enough coarse bulky feed to supply all their own bodily requirements, and have enough left for a large flow of milk. If the

CLASSIFIED ADS.

One Cent a Word

Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. **TRY IT HERE.**

LIVE STOCK

WORLD'S CHAMPION A. R. RED POLLS!
Minnesota Champion A. R. Guernseys
Consistent Winners in the 1915 Show Ring
20 of our foundation cows average 601.6 lbs.
butterfat, official.
Jean Du Luth Farm, : Duluth, Minn.



Purebred Registered HOLSTEIN CATTLE

Holsteins in Canada have far surpassed all other dairy breeds in numbers, milk and butter records, and in popular esteem. The membership of the Canadian Holstein Association has more than doubled in the past four years, and Holstein cows have led all breeds in the total amount of milk and butter produced in a year and also in net profit. Wherever you find them, Holsteins are proving the greatest profit makers for the farmer or dairyman. There's big money in the big "Black and White" Holsteins.

Send for **FREE** Illustrated Descriptive Booklets
Holstein-Friesian Association of America
F. L. Houghton, Sec'y Box 267, Brattleboro, Vt.

ENVILLA STOCK FARM

Cogswell, N. D.
Will quote you special prices at any time on Angus Cattle, Feeding and Breeding Sheep, Shetland Ponies, Duroc Jersey Hogs, Wolf Hounds, Collies, Rat, Bird Dogs and other breeds, Angora Cats. All varieties of chickens, turkeys, geese, ducks, guineas, pheasants, rabbits, ferrets. Pets. Live Foxes, Skunks, Mink and Badgers.

Bixby's Red Polls

My herd bull, J. D. Merryweather, No. 24396, is the son of J. D. Millie, A. R. Grand Champion cow at Minnesota and Montana, in the 1915 show-ring and won the milk and butter contest with Guernseys, Jerseys and Brown Swiss competing with records of 600 pounds butterfat. J. D. Millie weighed 1280 pounds at thirty months old, and is full sister to the World's Champion two-year-old heifer. **J. S. BIXBY, : : LISBON, N. DAK.**

FOR QUICK SALE
Crowded for range, am compelled to sell 40 head of mares and geldings. Address **Patrick McDonnell, Ennis, Mont.**

ROCKY HILL SHROPSHIRE. Twenty-five head of registered ewes for sale reasonable. Also, a nice smooth bunch of ram lambs and a few aged rams **Ernest Palfrey, Hope, N. D.**

PLEASANT GROVE FARM REYNOLDS, N. D.



Grand Forks Co., N. D., offers some of the finest registered Shropshire and Hampshire and Oxford Rams for sale. Better order now before they are all sold. Write to **R. E. Strutz, Bismarck, N. D.**

dairyman has plenty of alfalfa hay, he can practically balance his rations nicely with ordinary farm grains, such as corn, barley and oats. Five per cent of cottonseed meal or linseed meal added to this grain mixture will increase production.

If the roughage consists entirely of native hay, straw, corn fodder or corn silage, he can still use his home-grown grains but it will be necessary to use bran, cottonseed meal, or linseed meal also to supply sufficient protein. A good grain mixture in this case would consist of equal parts ground barley, ground oats and oil cake or oil meal.

If the roughage ration is of a mixed nature, such as 10 pounds alfalfa hay and 30 or 35 pounds corn silage, the dairyman might use a mixture of two parts corn chop, two parts bran or oats and one part cotton seed cake. These grain mixtures should be fed at the rate of one pound grain for every three and one-half or four pounds of milk each cow is producing.—Chas. I. Bray, Colorado Agricultural College, Fort Collins, Colorado.

COLLAR GALLS

Tannic acid is one of the very best remedies for collar galls according to

HOLSTEIN AND GUERNSEY HEIFER AND BULL CALVES. Choice selected promising dairy calves, practically pure Holstein and pure Guernsey, but not registered, nice color. \$20.00 each, all express paid to any point in North Dakota and adjoining states.

Order two, you will be so well pleased you will want more.—Meadow Glen Yards, Whitewater, Wis.

Wanted, to hear from owner of good Business for sale. Northwestern Business Agency, Minneapolis, Minn.

LEARN TO SPEAK IN PUBLIC. We train men and women to be good public speakers. Money, position and prominence to be gained thru good platform work. Total cost is only \$5.00. We teach other things—send for outline. Prin. W. C. Moore, New Egypt, N. J.

WANTED. Live Foxes, Skunks, Mink and Badgers, any time. Envilla Stock Farm, Cogswell, N. D.

WANTED to hear from owner of good farm for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

POWER FARMING. The magazine of farming with mechanical power. Send 10 cents for three months' trial subscription. **Power Farming,** Box C, St. Joseph, Mich.

Fence Posts and Small Telephone Poles, Direct from Producer to Consumer. Pay after Inspection, Save Middlemen's Profit. Prompt Service, Personal Attention. Write for Delivered Prices in Carload Lots. **Becker & Vogel, Clarks Fork, Idaho.**

FARMS OR BUSINESS, any kind, anywhere. We locate you free, deal directly with owner. Send for our free magazine. Western Sales Agency, Minneapolis, Minn.

CROPS, CATTLE, CREAMERIES. Famous Aitkin County. No other section offers so much for so little cash. Dairy and garden products are abundant and bring high prices. Send for free literature to Arnold, Land Agent, 107, Wolvin Bldg., Duluth, Minn.

WANTED: To hear from owner of farm or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

WANT TO BUY LAND? Get in touch with our Company. Cut out the middleman. Maps. Prices. Literature. Arnold, Land Com'r, 509 Wolvin Bldg., Duluth, Minn.

L. S. Backus, of the Missouri College of Agriculture. It can be secured from any drug store and is easily applied by rubbing lightly over the collar every morning and evening if the horse is working.

Collar galls usually appear either at the top of the neck or at the point of the shoulder where an improperly fitted collar rubs. It is important that the collar be kept clean at all times in order that it may be kept from cutting into the neck, but special care in keeping it clean is necessary after these galls start. "An ounce of prevention is worth a pound of cure."

HOG CHOLERA

Hog cholera is the most destructive of livestock diseases in the United States at the present time. It is very contagious and from seventy-five to one hundred per cent of all hogs attacked, die. Many of those that do recover are not profitable.

Hog cholera is caused by a germ. The only way that it can spread is that it be carried from a sick hog to well hogs. This spreading can be brought about by its being carried on the feet of man or such animals as sparrows, pigeons, chickens, and dogs.

At the Experimental grounds of the Veterinary Department at the Agricultural College, healthy pigs have been kept in pens adjoining those in which hogs sick with hog cholera were kept and without the well ones taking the disease. The thing which was lacking was something to carry the germs. A. E. Nelson, now County Agent in Steele County, while in Iowa, tried out the following experiment:

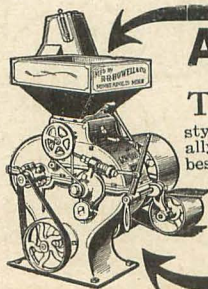
He tied a red rag to the leg of a pigeon and let it loose. Then he notified the neighbors to be on the lookout for this pigeon and to report to him in the evening if it had been seen. The pigeon was seen at eleven farms that day. This gives an idea of how well this pigeon could have spread hog cholera if it had got its feet loaded up with the germs.

Hog cholera is not feared as much as it used to be, owing to a better understanding of the disease, a more general appreciation of sanitary meas-

ures and the use of protective hog cholera serum. When this is injected into a well hog, it gives immunity against hog cholera for four weeks. However, if hog cholera is in the herd when the serum is injected the exposed healthy hogs are apt to become immune for a longer period, some for life. The county agents in North Dakota have been able to save about 80 per cent of the hogs treated by using the serum after the cholera broke out in the herd. A higher percentage could probably be saved if the hogs could be watched so closely that when the first hog became sick the serum could be injected at once. Ordinarily, some hogs become quite sick before the trouble is recognized as hog cholera, and then a day or two may intervene before the serum is used; this means that some of the hogs become too sick to be helped, before treatment can be given. It is important to have everything in readiness so that the serum can be injected as soon as the disease breaks out. A syringe should be on hand and the serum can be ordered by telegraph from the State Serum Institute at the Agricultural College.

The State Serum Institute has not had sufficient funds to manufacture enough serum to supply the state but it has borrowed money and purchased serum subject to test. To this purchased serum has been added such serum as accumulates as a by-product in experimental work. At the present time the Institute is furnishing tested serum at three-fourths of a cent per cubic centimeter. Orders will be received from 8 A. M. to 6 P. M., Sundays excepted. The serum will be sent by express or parcels post C. O. D. It is put up in bottles containing 120 c. c., 240 c. c., and 500 c. c. The dose for a 100-lb. pig is 40 c. c. and more or less as the pig is larger.

It is a good plan to keep the hogs confined and to keep the quarters and eating utensils well-disinfected. No one but the feeder should be allowed to go near the hogs. Hog buyers often spread the cholera. During the cholera season, it is a good plan not to allow any one to go into the hog pasture as well as to keep oneself away from where there is cholera.



A ROLLER FEED MILL

WILL GRIND A WAGON LOAD OF FEED FOR 10 CENTS.

THIS is the Famous **Howell Roller Mill** you have heard so much talk about. The new improved mill for the scientific grinding of grain. Old style Burr and Stone Mills are out of date. Thousands of them are being annually replaced by the Famous **Howell Roller Mills**. Grind twice as fast as the best burr mill made. Does not heat the feed. Grinds Graham and Rye flour as well as feed. Has big capacity. Requires little power. No burrs or stones to wear out. Guaranteed to last a life time. Made in 13 sizes suitable for any size engine. Save one-half your time, gasoline and money by using a **Howell Roller Mill**. Write for Catalog F-13. We will send it free, together with the **Famous Howell Roller Feed Mill Puzzle**.

R. R. HOWELL & CO., Manufacturers, Minneapolis, Minn.

Often times a hog owner will come over to see hogs sick with the cholera, treated with the serum. This is a capital way to have it carried to one's own farm. In case one has to go where there is cholera, disinfect the shoes before going near any healthy hogs.

The careful use of hog cholera serum will not only save a good many hogs in a herd, but it makes it possible to keep an outbreak from spreading as much as would be the case without the serum treatment.

SMALL PIGS

W. H. Peters, N. D. Exp. Station

In traveling thru the country in the fall of year a great many pigs weighing not more than 50 to 70 pounds are seen in the feed lots and pastures.

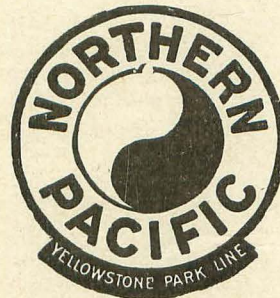
To be marketed at a price anywhere near the top these pigs must be carried thru the winter at least until January or February. When one considers the additional cost of gains made thru the winter months when no green feed is available one is led to wonder whether it would not be more profitable to have these pigs larger at this time of year. That it is more profitable to have the pigs larger at this time of year, at least in most cases, is proven by the fact that the most successful hog raisers see to it that their spring pigs weigh at least 110 to 135 pounds by the end of September. Should one undertake to criticise a man with 60-pound pigs and tell him that his pigs should be larger an argument immediately follows. The average farmer knows that his pigs should be larger at that time of year to be profitable. His problem is how to get them larger. Wherever small pigs are found at that time of year several shortcomings can be located in the management the pigs have had. The first is that inferior, undersized breeding stock has been used, the second is that the pigs were farrowed late in the spring and the third is that they have gone thru the summer on pasture but with too limited a grain ration. The first essential in raising big growthy pigs that can be marketed in the month of November at a weight of 175 to 200 pounds is

BOTS AND WORMS IN HORSES

are dangerous and should be exterminated without delay, according to Government bulletin. Nothing will do the work more thoroly and safely than our famous Improved Heureka Worm Capsules. They are absolutely reliable and fully guaranteed and highly recommended by professional men. Price \$2.00 for 12 capsules; or with Bailling Gun, one dozen \$3.50, two dozen, \$5.00, four dozen \$8.00. Order today from The Breeders' Remedy Co., 47 Biddle St., Dept. 24, Milwaukee, Wis.

Low Round Trip Home Visitors Fares

Via



December 1 to 31

Liberal Stopover and
Return Privileges

Secure Information and
Tickets From
Your Local Agent Or

A. M. CLELAND,
General Passenger Agent
ST. PAUL, MINN.

St. Paul Outdoor Sports Carnival
January 27 to February 3

that good big, heavy boned breeding stock must be used. For some reason or other a pig farrowed in March or early in April always seems to grow faster than one farrowed in May or June. The second essential to rapid growth of the pigs is that they be farrowed early. March is the month selected as the most successful farrowing month by the best hog growers. It is true that it takes something of a building and a little care to farrow the pig crop in March but it pays. In order that pigs may make a rapid growth thru the summer months they must have a combination of good pasture and a suitable grain ration. It has been proven a good many times that pigs will make the most rapid growth when running on good pasture and getting their grain from a self-feeder. However, this has not always proved the most economical method of making the gains. In the work at the North Dakota Experiment Station covering several years, good gains have been made when growing pigs were pasturing on alfalfa and receiving a grain ration of three pounds per day per 100 pounds live weight of pigs.

It has been demonstrated that hogging off corn is one of the most economical and practical ways of fattening pigs. However, if this is to be done successfully the pigs should weigh an average of 115 to 125 pounds at least when they are turned into the corn in September. This is another reason why every effort should be made to get the pigs early in the spring and grow them rapidly thru the summer months.

It is only a law of nature that pigs should make a more economical gain thru the milk of the dam than in any other way, and it is also true that the sow will furnish nourishment for her young pigs at less cost for the raw material than any other animal on the farm.

Among Our Advertisers

FOURTEEN IMPROVEMENTS DISTINGUISH 1917 MODEL BUSH CAR

Greater comfort, greater power, more convenient control, full streamline body. One-man top, longer wheel base, are some of the new features in the Bush. It is one of the trimmest, most complete cars selling for as low as \$725.

The demand for this attractive low

priced car has made necessary a bigger output for the new year. Increased output means decreased manufacturing cost and for this reason it is possible, says Mr. J. A. Bush, Pres., of the Bush Motor Co., to hold the prices at the same low figure in spite of the many important improvements.

The company has been so successful in closing contracts for materials that prompt deliveries are promised even on quantity orders. Agents will be fully protected, no matter how big the demand increases. Complete details can be had by writing Mr. J. H. Bush, Bush Temple, Chicago, Ill.

METHOD OF EXTERMINATING COYOTES

In view of the prevalence of rabies among coyotes in Eastern Oregon, the district forester at Portland, Ore., has announced the results of some very effective work that has been done by the Forest Service in destroying these animals. Of all the predatory animals killed in the district last year by Forest Officials, 31 per cent were killed on the Malheur National Forest by a method which Supervisor Bingham has found very successful. In one month last winter, Mr. Bingham killed 32 coyotes in the vicinity of John Day, devoting only half his time to the work. For the benefit of those who have been victims of these mad animals, an extract from Supervisor Bingham's report on his method of dealing with the coyotes, is given herewith:

"A Poison should be selected that will lose its effectiveness in a short time after being placed, so that in case it is not picked up by a coyote, it will do no damage. The Northwestern Hide and Fur Company, Minneapolis, Minn., sells a poison of this character in the shape of a small capsule, containing enough poison to immediately kill a coyote. The price is \$1.75 per 100 Capsules. In ordering these Capsules, it must be stated for what purpose they are intended, so that proper size will be secured; different sized capsules are required for different animals. These Capsules are called 'Sure-death Poison Capsules'.

"Too much emphasis cannot be laid on the necessity of leaving no human scent, either on the poisoned rolls of butter, or on the ground about the carcass. Firearms should never be carried. One might occasionally be able to shoot a coyote if he had his gun along but in doing so he would do more harm than good. Everything used in the preparation and placing of the baits should be absolutely free from scent. One should never dismount within half a mile of

the bait for any purpose, nor leave anything about the bait that could possibly carry a human scent."

THE TRAPPERS CATCH BROUGHT THE FIRST FOREIGN WEALTH TO THE UNITED STATES

Millions of dollars will change hands between trappers and dealers for American Raw Furs this season. It is, indeed, wonderful to contemplate when one thinks of the thousands upon thousands of fur-bearing animals killed every year thruout the United States, and still the supply does not seem to be withering, says Mr. A. B. Shubert, President of A. B. Shubert, Inc., Chicago.

Many people are of the opinion that the Fur Industry is becoming extinct, due to the fact that the animals are being killed off in many parts of the country. This is not the case, in fact, it is just the opposite of conditions as they exist. The demand of fashion and competition of the large Circular Houses have sent the price of furs up to such an enormous height that a clever trapper can make a small fortune, if he handles his catch properly.

SANITATION AVOIDS SICKNESS

Working people lose millions of dollars each year from illness. Yet much of this illness could be avoided if people made every possible effort to live in rooms which get sunlight and fresh air.

Do not keep windows down. Windows are made to let light and fresh air into the house. Keep your windows open from the top and from the bottom all the time—day and night, for night air is just as good for you as day air. Then you will sleep well and stop taking colds.

Bathe every day. The man who bathes every day feels better than the man who does not.

Until recently even the most careful family has been in more or less danger from the unavoidable infection spread by the outhouse. But the invention of the sanitary chemical indoor closet has done away with the necessity of putting up with this very perilous evil.

During the past year thousands of farmers and small town residents have torn down their outhouses and installed these chemical closets which have proven most satisfactory. One of the most popular of this type of closet, we understand, is made in Detroit, Mich.



Poultry Department



POULTRY FOR PROFIT

Michael K. Boyer

There was a time when the fanciers classed "utility" poultry with mongrels.

The craze for fine-feathers and standard markings seemed to be the only true object in poultry culture, and to gain that end inbreeding had to be resorted to.

What was the result?

The poultry deteriorated, grew delicate in constitution, and became only ordinary layers.

The outcome in this decline in the utility qualities caused the poultry farmers to cross breeds so that they might secure stamina and prolificness. The mingling of different bloods had a decided effect, and more crosses were resorted to than thorobreds.

It soon came to the fancier that if this course was allowed to grow, it would eventually do serious injury to the trade in purebred stock.

It was then that the fancier woke up. He began to realize that fowls were created more for food than for show, and that if he wished to continue "to do business at the old stand" it would be necessary to cultivate the practical qualities of poultry culture.

Today we have breeds noted for their utility work. No longer is the commercial fowl dubbed a mongrel, and the value of a bird is now recognized by her practical work, and not by her show record.

Of what value is a hen that scores 95 points and yet unable to lay more than a score of eggs in a year?

When the writer began to use trap nests he discovered that in a pen of fifteen Light Brahmas one hen laid one hundred eggs from the first day of January to the first day of June, and in the same pen was a hen that laid but eleven eggs in that time. Furthermore, that the hen that laid but eleven eggs was a model fowl from a fancier's standpoint, while the layer of one hundred eggs was disqualified in several ways, according to the reckoning of the Standard. Which of the two could the hardworking farmer afford to keep? It is plain.

Poultry ranks of today must thank the inventor of the trap nest for this improvement in our poultry. We are now able to breed from our best lay-

ers, and each year improve their laying qualities.

Trap nests should be used on every poultry farm. While it is very satisfactory to know just how many eggs our hens can lay in an entire year, we do not take to that part so much as to know how many eggs our hens can produce during the time of good prices—from October 1st to June 1st.

The fancy and utility can be successfully combined—if we will make utility the foundation. We have demonstrated that on our farms.

We first picked out our best layers, using only such hens as our trap nests proved to be good, steady winter layers. We purchased male birds from a family of noted layers, and thus repeated our work year after year, using only the cream of our flocks, until today we have a strain of fowls that do the bulk of their laying in fall, winter and early spring, and which lay very few eggs during the summer season.

On a farm, located near the home of the writer, it is a rule to each year retain only such pullets as begin laying in January. The plant in question is an egg farm, and therefore winter egg production is most needed. All pullets that do not begin laying in January, this party argues, will be of little use during the good season—and more profitable in market as spring roasters.

If we could do so, we would have all hatches completed in April—and where artificial incubation is employed we think it advisable to confine all the stock to April hatches, using prior and succeeding hatches for market poultry.

In the states the most popular breeds today are the Plymouth Rocks, White Wyandottes, Rhode Island Reds, Single Comb White Leghorns and the Light Brahmas. The first three are purely American and the latter two have been so changed in character that they, too are very much Americanized. At one time the Black Langhans was highly prized and very popular, but the American prejudice against white skin and dark plumage is a drawback for the breed from a utility point.

We admit it is a foolish prejudice for some of the finest market fowls are white-skinned. But the markets must be catered to.

Another craze in the average American market is the brown egg. In al-

most every market in the States the brown egg is not only preferred, but brings a better price. Epicures claim such eggs are richer and sweeter to the taste. Not one can tell by the flavor of the contents whether the eggs have been encased in brown or a white shell.

When one engages in poultry culture for profit, he must throw aside his own prejudices and cater strictly to the demands of the market, even if that market calls for brown-shelled eggs, or yellow-skinned poultry upon his customers.

That part settled, he must take up the question of production—each year selecting and breeding from his best laying stock; provide houses that give comfort to the flocks, feed such rations as produce eggs without overstimulating; and care generally in a manner so that the best of results will be obtained.

Let us go farther. A study of the conditions of the market must be carefully made, and if he would create a demand for his goods, even the smallest detail must be observed. Sometimes a certain fashion in dressing carcass, or in plumping it up and neatly tying with ribbon wins a customer. Each carcass should be tagged with the name and address of the shipper—and each egg should bear the advertisement of the farm (a rubber stamp will do it).

When a farm is able to establish confidence in its goods, and when these goods can be identified by a trade mark or advertisement, there is very apt to be a greater demand for the goods than the supply.

FOR SALE. Well Bred Up R. C. Reds. First prize winners; cockerels, \$1.25, pullets, 50c. Mrs. John Henderson, Bx228, Beulah, N. D.

White and Columbia Wyandottes, Light Brahmas, and S. C. White Leghorns
Over 30 years a breeder. Stock and eggs for sale. **MICHAEL K. BOYER**, Box 27, Hammon, New Jersey.

Quality White Rocks

Hatching Eggs and Stock in season. We have the Best. **O. A. Barton**, Valley City, N. D.

BARRED P. ROCKS

Big, Strong, Prize-Winning Stock
Hawkins, Bradley Strain
Eggs and stock in season at very reasonable prices.

PERCY BEALS
BOX 736 : : FARGO, N. DAK.

Advertise

Your Breed of Poultry
It Will Pay You

School and Home



Miss Ura Leader,
Ruraldale, N. D.

Dear Miss Leader:
By this time I imagine that your work is well started and that the children are deeply interested in the study of agriculture. Most young-

sters are interested in the topics which are treated in this course. It is well that they are interested for now you have topics less familiar to the students, with which to deal.

Legumes are of the utmost importance in all systems of agriculture. The longer the land is farmed the more important this class of crops becomes. Their place on the farm cannot be fully taken by any other crop.

If you are so situated that you can examine native prairie fields, you will find a large number of different kinds of legumes scattered thru the vegetation. They are native to the state and are found in all fields. Legumes should have no less an important place in cultivated fields.

Perhaps it will be well to cite some of the important things that legumes are noted for.

Legume hay is very high in feeding value. It is more valuable than hay made from grasses.

Legumes improve the physical condition of the soil. Much, in crop production, depends on the conditions of the soil. Corn, potatoes, and wheat do exceedingly well after legumes.

Legumes, thru the agency of the bacteria which live on their roots, gather nitrogen. Nitrogen sells for about twenty cents a pound in commercial fertilizers. It is one of the essential elements in plant growth.

Many of the legumes leave a very valuable crop residue in the soil. Clover or alfalfa stubble plowed under increases the organic matter in the soil.

There is no part of the state to which some legume is not suited. Of course soil type and climatic conditions will determine to a large extent the success of each crop.

Clovers do well in the eastern third of the state. Medium red clover is undoubtedly the best variety. It grows well either alone or in mixtures with timothy. It works well in a short rotation. The seed is valuable

and red clover produces a large amount of seed.

Alfalfa is the best legume for the western two-thirds of the state. It must be left several years in order to get the best results. Two or three crops are sure every year. When once established it produces well under very dry conditions. Alfalfa is undoubtedly the coming hay crop for much of North Dakota.

Canada field peas make a valuable legume grain crop. They do well in most parts of the state. The crop may be harvested or pastured down in the field. It is somewhat difficult to harvest the crop for grain since the bunches are light and are easily rolled along the ground by the wind. Peas yield well and the seed is very high priced.

I think, Miss Leader, that you will do well to strongly emphasize the importance of the legumes in working out better systems of agriculture. The old system was all right in its time but the place has been reached where other crops than grain must be produced.

The root crops will never be very important in this state. A few acres might well be grown on farms where livestock is kept. For either beef or dairy cattle, silage will be more satisfactory since it is more easily produced and stored.

However where a few hogs or sheep are kept, root crops are almost invaluable. They are highly valuable for breeding stock. The product from a half an acre will feed many animals during the winter.

Mangels are easily produced. They yield well, but do not keep as well as rutabagas. Mangels are excellent for hogs, chickens or cattle.

Rutabagas yield fairly well, are easily harvested, keep well and are suitable for all classes of live stock.

Carrots are especially valuable for horses. A few carrots a day during the winter will work wonders for horses. Carrots are good for all stock.

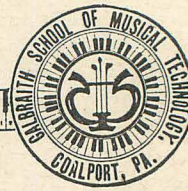
Turnips do quite well but are not

popular. One of the root crops previously mentioned is preferred by most feeders.

The root crops are of little importance as a farm crop. They should have a place on stock farms. Their value in the ration is not determined alone by their composition.

The important things in the care of live stock may be very briefly summarized; good clean and varied feed, kind treatment, dry and well-ventilated barns, and fresh pure water. Each and every one of these topics are fundamental in successful stock production.

Live stock are kept for the gains they will make or for some product they produce. Some people seem to think dairy cows can produce milk from the heat obtained in the lee of a barbed wire fence, wheat straw and snow balls. Some seem to think that the stool is a more efficient milking



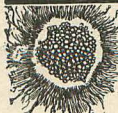
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Westland Educator, Box F. - - - **Lisbon, North Dakota**

machine than is the gentle touch of the human hand.

Other people seem to think mud and filth is good enough for a hog—and then wonder why their animals die from disease. How much speed can you get from your Ford with no gasoline, on a cold morning, and in a mud hole?

Very truly yours,

O. O. CHURCHILL.

A REVOLUTION IN THE COST OF ENTERTAINMENT

Under the bureau system of selling talent only the cities have heretofore been able to afford high grade lecture



Miss Maude Florence Hedstrom

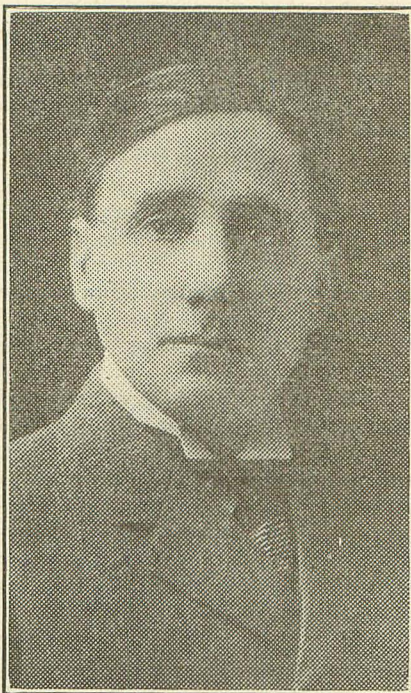
courses during the winter. The bureau system employs agents to book the talent and uses expensive form of advertising and makes considerable profit for itself. All of which results in two prices being paid for talent.

The Agricultural College employs no agents and reduces advertising expense to the minimum. It makes no profit on the course and conducts it as a part of its service to the state. The result is that high grade talent can be secured for a fraction of its former cost, and small towns and even country communities can get good music, lectures, and moving pictures that will really entertain and instruct during the long winter evenings of North Dakota.

Two of the numbers of the course this year were secured fresh from the chautauqua and lyceum platform, and others on the program have been so-

lited for work on big courses in the east.

The lectures were secured because of the message they have for North Dakota agriculture and North Dakota education. Even the moving pictures have a direct bearing on North Dakota life.



E. S. DeLancy

The numbers this year include E. S. DeLancy, Farmers' Institute Lecturer; Florence Hedstrom, a Chicago soprano pupil of Wm. Clare Hall; Maude Knight, graduate of the Fargo Conservatory, reader and pianist; A. P. Hollis, lecturer with moving pictures; and J. Adams Puffer, the famous Boston lecturer and author on the Boy Problem. If you want this course, write Director Rural Lyceum, Agricultural College, N. D.

THE SIMPLEST PRINCIPLES OF AGRICULTURE

By Chore Boy

Care of Stock

By care of stock we usually think of providing a barn to protect them

during cold weather. The care also extends to summer when the stock need to be provided shade and protection from flies and mosquitoes. The care also needs to include measures for protecting the stock from disease.

The winters in North Dakota are cold but the atmosphere is quite dry which makes it a healthy climate. It is worth noting that when the buffalo had the whole American continent to roam over that they chose the northwest and especially the Dakotas and Montana.

All kinds of stock do not need the same protection. The dairy cow is thinly fleshed and needs to be kept in a good warm barn. Beef cattle on the other hand do not need a warm barn. In experiments at the Minnesota and North Dakota experiment stations in which a bunch of steers of the same age and weight were divided and part kept in a warm barn and part kept in an open straw shed it was found that the lot kept outside ate a little more and made really better gains than the ones kept in the warm barn. It was also found that the steers in the open shed preferred to lie outside rather than under cover when the weather was nice. This brings out the big difference in beef and dairy cattle. It is easy to provide shelter for beef animals while



Indoor Closet

More Comfortable, Healthful, Convenient

Eliminates the out-door privy, open vault and cess-pool, which are breeding places for germs. Have a warm, sanitary, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.

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The germs are killed by a chemical process in water in the container, which you empty once a month. Absolutely no odor. No more trouble to empty than ashes. Closet absolutely guaranteed. Write for full description and price.

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W. G. Crocker, - - - - Lisbon, North Dakota

A detailed illustration of a leather watch fob. The fob has a large rectangular buckle at the top and a circular medallion below it. The medallion features a detailed engraving of a deer's head facing forward, surrounded by leaves. Below the deer's head, a banner curves across the bottom of the circle with the words "NATIONAL SPORTSMAN" inscribed on it. The entire advertisement is framed by a decorative border.

You like to go Hunting Fishing Trapping

Then surely you will enjoy the National Sportsman Magazine with its 160 richly illustrated pages, full of overflowing with interesting stories and valuable information about guns, fishing tackle, camp-outfits—the best places to go for fish and game, and a thousand and one valuable “How to” hints for Sportsmen. The National Sportsman is just like a big camp-fire in the woods where thousands of good fellows gather once a month and spin stirring yarns about their experiences with red dog, rifle and gun.

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one of our handsome Ormulo Gold watch fobs as here shown with Seal grain leather a trap and gold plated buckle on receipt of \$1.00 for a year's subscription to the National Sportsman. Here's what you get for your money:

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For Your School

This will interest patrons, pupils and teachers

One Teacher Writes:

Finley, N. Dak.

March 25, 1916.

The N. D. Farmer:

I am very much pleased with the premium you sent me. It took less than two hours to secure the ten subscriptions and I feel more than paid for my work.

Thanking you for your promptness
in sending me the 4x8 flag, I am

Yours truly,

MARY BIRKLAND.

Write us for our plans by which you may obtain a big flag for your school without paying a penny. A postal will do.

NORTH DAKOTA FARMER,
Lisbon, - - - North Dakota

for dairy animals a good deal better protection must be provided.

Horses do not need it very warm, many let the horses run in the open all winter. This is not the best practice. Hogs will do better if they are provided fairly warm quarters. All that is needed for sheep is shelter to protect them from rain, snow and wind.

The barn for beef cattle and hogs need not be expensive. Many farmers have used straw sheds with good results. Some have first baled the straw and then built it into the walls. Some have plastered the wall on the outside and thus made a very warm wall. Others set up posts and nailed cross-pieces on these and then strung woven wire across the cross pieces and then threshed the straw over this frame work.

Two things need to be remembered in making a barn, that is, to provide plenty of light; let the sunshine in, and ventilation. When the barn is well-lighted the stock seem to do better and it will be kept cleaner. Sunshine is one of the best things for killing germs and many diseases are caused by germs.

Many insects annoy stock and when stock are annoyed the food consumed is partly wasted. Mr. Frank Sanford of Rogers, N. D. in a lecture recently said that one summer a hen stole a nest in the cattle barn and was allowed to hatch her brood there. In the fall when the cattle were put in the barn the two calves in the stall where the hen had been did not do well. One gained four pounds the other nothing. The other calves had gained forty to fifty pounds during the same month. He said that it was the lice left by the chickens that kept the calves from gaining. He said that when the calves were washed with a weakened solution of a good dip that the lice were killed. He also made the assertion that when cattle were not protected from flies they made but little gain in August and September. A barn that is darkened and with burlap covering a part of the door so it will rub along the animal's back when it walks in, is a good protection from flies. Some good shade trees on a hill or high ground also afford stock some protection from the hot sun. The horses can be protected from nose flies by means of a muzzle or by attaching a row of strips or strings to the bridle or better so that they will hang around the nostrils.

The botfly lays its eggs on the hairs on the horse's legs and on its breast. Scrape them off with a knife and the horse will not get them into its mouth in scratching these parts. The eggs are yellow and easily found.

Disease in stock needs to be guarded against. First introduce only healthy animals and then keep them healthy by good and regular feeding, by good ventilation and plenty of light and sunshine. Tuberculosis is one of the most common diseases in cattle; it also affects hogs and chickens. Tuberculosis in cattle can be detected by means of the tuberculin test and when cattle are bought have them tested first.

Hog cholera is the most common hog disease. It is caused by a germ that can be carried by sparrows, pigeons, dogs and on one's clothing and especially the shoes. This makes it a hard disease to guard against.

The best thing to do when hog cholera gets into neighboring farms is to keep the hogs indoors and to be mighty careful that no one is allowed to go near them except the feeder. Hogs buyer have been known to carry hog cholera from one place to another. The serum treatment is another preventative but that will have to be taken up in another article.

The most common horse disease is glanders, which also attacks man. The discharges from the nose of a glandered horse contain the germs which cause the disease. This means that a glandered horse would leave the disease germs in watering troughs and mangers. This gives an idea of how to guard against one of the most common ways in which glanders is spread.

Most diseases are caused by germs and these have to be transmitted from a sick animal or where left by a sick animal to a well one. Hence guard against anything that offers a chance for transmitting the germs. Sunshine is a germ killer and many chemical preparations can be used to kill germs. Cleanliness, plenty of sunshine and good ventilation promote the animals' health and are detrimental to disease germs.

RAISES SWEET CLOVER CROP

Ray McKaig Produces 35 Bushels of Valuable Seed Near Ft. Rice.

"Sweet Clover Ranch" as the name of a Morton county farm does not seem appropriate but the facts in connection with one of the principal products of the farm, located near Ft. Rice, and owned by Ray McKaig, proved that the name is well chosen. A sweet clover crop raised on ten acres of the place just threshed yielded 35 bushels of seed which is worth \$640. The net profit of the crop to Mr. McKaig was about \$600.

The sweet clover was first planted in 1914 and last year twelve loads of

excellent hay were secured from the tract. Thirty-two dollars worth of seed was bought in the first place. It was planted on high land and particular attention was not given to the selection of a desirable kind of soil, same being spotted with gumbo. A good stand was immediately secured and the aggregate yield this year was 35 bushels of the precious seed. Much of the crop of seed was sold before it was threshed at \$18 per bushel.

Successful raising of sweet clover is just another of Morton county's diversified farming successes and is one of the things that will sure bring about \$100 an acre land.

HOUSEWIFE'S EXCHANGE

If oiled paper is pressed on the cut side of a cake, it will not dry out. As a covering, oiled paper will keep leftovers from becoming dry and useless.

Keep in the house a roll of white passe-partout picture binding. Use the empty, wide-mouthed bottles and their corks as receptacles to hold garden seeds, pasting a strip of the paper on each bottle to mark contents. Envelopes and papers of seeds attract too many mice, while the contents, of glass bottles can be seen at a glance, thus they are handier than tin cans.

Dry cleaning with cornmeal is ren-

dered much more efficient by moistening the meal with gasoline. This is especially good for wool garments that are apt to shrink when washed in water, and is excellent for removing spots from rugs.


One day when I was in a great hurry and could get no one to help me mark off a skirt I was making, I thought of a novel way out of my difficulty. I took a piece of chalk and rubbed it well along the edge of my sewing table so that a white mark came off on my skirt when I rubbed against it. Then I slowly turned around until a faint white line could be seen all around the skirt. After removing the garment, I measured down from the white line the distance I wanted the hem of the skirt to be, and had no difficulty in making it hang perfectly even all the way around.

If your kitchen is crowded and you have an ordinary kitchen table, gather a ruffle neatly around it and you will be surprised at the number of things you can hide under it; such as cooking vessels that you cannot hang up, and are too big for shelves.

When the first slightest symptoms of a cold in the head manifest themselves, put up the nostrils, by sniffing from the hand, or on the end of a finger, either listerine, or dioxogen,

and draw it well up into the head. Also, put a drop or two on the tongue and let it lodge in the throat. Repeat every hour till symptoms abate, then at longer intervals, or at first

FROZEN FISH



We publish and mail our customers each winter a Recipe Book for Cooking Fish. We want **New Recipes** for Cooking the following: **Herring, Pickerel, Pike, Whitefish, Salmon, Cod and Halibut**, and offer **\$50 cash prizes** for best Recipes: \$25 as first; \$10 second; and \$5 each as third, fourth and fifth prizes. \$50 will be deposited with a Duluth Bank to pay the winners. Send Recipes for cooking each of the above fish, using one side of paper. Give name and address plainly. Recipes will be in our new fish book. Prizes awarded Feb. 15, 1917. We handle all these varieties. **Our Split Rock Herring DeLux** 100-lb. box, gross wt. \$3.50. Our Large Price-list in next issue.

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Shipped direct to you from the fisheries at lowest price. Fresh frozen herring per 100-lb. box, \$3.35. Frozen fish in sacks \$2.90. Dressed herring with heads off and inwards taken out \$4.50 per 100-lb. box. New Salted Herring, per 100-lb. Keg \$3.50. Per 50-lb. Keg \$2.00.

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sign of their return. Both of the preparations are antiseptic and anti-congestive.

Save Your Syrup Cans

The tin cans in which syrup, etc., come, and which have the cover that sets in, will be found valuable at canning-time for preserving peaches, pears, etc., as fruit thus kept retains its color, and these can do away with the otherwise necessary rubber. All that is essential is to pour melted paraffin around the edge of the cover.

To Keep Cheese Moist

Wrap cheese in a cloth soaked in vinegar. This will keep the cheese moist and prevent it from molding.

Beans for Several Meals

In baking beans for a small family, try dividing the batch so as to nearly fill several empty pound coffee cans. Place a piece of pork on top of each and bake as usual. The cans may be kept in the refrigerator a week or more and re-heated when needed.

Seasonable Receipts

Mrs. Sadie Baird, Editor

For Roasting Fowl

A fowl should always be placed upon its knees, instead of upon its back, then the juices will naturally fall, making the white meat, which is apt to be dry, juicy. Fifteen minutes be-

fore serving, turn the fowl upon its back to brown the breast.

Roast Turkey

Never try to roast a turkey smaller than ten pounds. After the fowl has been cleaned, wipe dry inside and out, and stuff with the following mixture: One pint of bread crumbs, softened with a little hot water and mixed with one pint of cracker crumbs, one-half cup of melted butter, teaspoonful of salt, half teaspoonful of pepper, teaspoonful of grated onion and poultry seasoning to taste. Truss and cover the breast and legs with a thin coating of butter, place in a roasting pan in a hot oven; when browned well add a pint of boiling water. Cook for two hours at a reduced heat, basting frequently. When done, remove from the roasting pan to a hot platter, and thicken the gravy with a little flour mixed with cold water.

Cranberry Sherbet

One of the most appetizing ways of serving cranberries that requires but little time for preparation is sherbet. The tart flavor will be found palatable in place of the many sweet sherbets. To four cups of stewed cranberry juice add the strained juice of six oranges and four cups of granulated sugar. Pour into an ice-cream can and freeze until of a mushy consistency. Whip stiff the whites of four eggs, stir into the cranberries and complete freezing.

Stuffed Dates

Two fillings for stuffed dates, which are relished by persons who do not care for the sweet fillings are chopped walnuts mixed with salad dressing or powdered sugar mixed with the juice of a lemon instead of the white of an egg.

Sea Foam

Four cups brown sugar, one and one-half cups hot water, whites of two eggs, beaten stiff. Boil the sugar

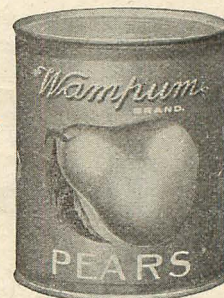


"Gee——
they're good!"

A boy in school defined wholesome food as—"stuff you kin eat's long's you kin hol'some."

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H O N E Y

Pure Extracted honey—the most healthful and wholesome of all sweets. Our honey is put up in a neat clean manner, and is strictly first class in every way. Price: 2-60 lb. cans in case, \$12.60; 1-60 lb. can \$6.60; 6-10 lb. pails in case, \$7.20; 6-5 lb. pails in case \$3.75; single 10 lb. pails \$1.25; single 5 lb. pails \$.65.

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We send out to be pure honey and of the finest quality. Price, \$3.45 per 30-lb. can, or for 2 or more cans \$3.30 each. Sixty-lb. cans \$6.30 each. Sample 10 cts. Price List, Free.
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equally
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ESTABLISHED 1780 DORCHESTER, MASS

and water until the syrup forms a soft ball in water. Pour slowly over the beaten whites, add one cup of mixed nuts or pecans and drop by teaspoonfuls on buttered tins.

Chocolate Peanuts

Place shelled peanuts in pan; pour over them melted sweet chocolate and drop on greased paper to cool. Chop the peanuts if desired.

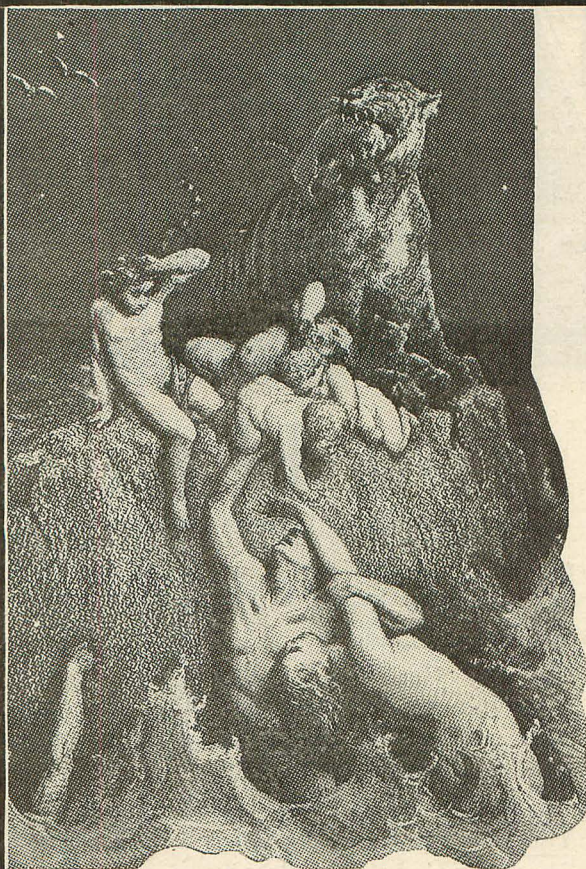
Fudge

Two cups brown sugar, two cups white sugar, two squares of chocolate, two cups cream, or milk, if milk is used add piece of butter size of an egg. Let it come to a boil slowly, then boil quickly until it makes a soft ball in cold water, cool, and beat until it creams, then mould. Marshmallow fudge may be made by pouring the

fudge, after beating, over marshmallows in a buttered pan.

Butterscotch

One cup of sugar, one cup of molasses, one-half cup of butter, a pinch of soda. Boil until it hardens in cold water; pour in thin sheets on buttered platter to cool; mark off size to suit.



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"The Chaldean Story of the Flood"

Dug Up From the Ruins of Ancient Chaldea

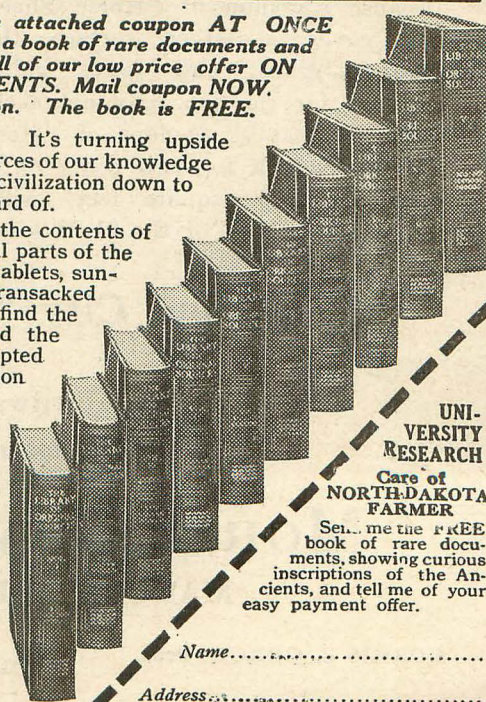
DO YOU KNOW that there has been dug up from the ruins of old Chaldea a complete story of the Flood—the same in every detail as Moses' account in Genesis—and that it was written thousands of years before his version appeared? Hardly one in a million has ever had an opportunity of seeing this startling story—**HAVE YOU?** But it is one of the many thousand curiously interesting accounts in

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Send me the FREE book of rare documents, showing curious inscriptions of the Ancients, and tell me of your easy payment offer.

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Which Will You Have

Here are two cans of Paint.

Both are exactly the same size.

One will cost you \$2.75 per gallon. The other will cost perhaps as little as \$1.75 per gallon, but the Mound City Horse Shoe Brand at \$2.75 per gallon, will cost you less in the end.

Reason? Simple enough.

Because a gallon of "Horse Shoe Paint" will cover a larger surface than the cheaper grade, and fewer gallons are required for the job. By actual test you will find that six gallons of "Horse Shoe Paint" (enough for two coats on a house measuring 2100 square feet) will go as far as ten gallons of the \$1.75 kind.

In other words, you invest \$16.50 in "Horse Shoe Paint," against \$17.50 in the cheaper grade.

Not only this, but the Horse Shoe Brand is bound to outwear the other two to one, making the Horse Shoe Brand far more economical in the end.

You save on the total cost of material.
You save in labor, because of the long life of the Horse Shoe Brand.

You save once more in the satisfaction of knowing that your property is beautified and protected with the highest quality of painting material that modern skill and science has yet developed.

AGAIN!! Mr. Property Owner:—
Which will you have?

Mound City "Horse Shoe Brand" Paint

Sold only by

Paint, Hardware, Lumber and Drug stores

Write for name of your nearest dealer

Mound City Paint & Color Co.

MANUFACTURERS - ST. LOUIS, U. S. A.

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